

10/510444
DT04 Rec'd PCT/PTO 07 OCT 2004**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-12 (Canceled)

13. (New) A method for continuous production of plasterboard elements in which two cardboard-type paper sheets enclose, within shaping means, a plaster-based hydraulic binder to create a composite strip which then hardens on two hardening belts carrying at their edges two tapered strips for producing longitudinal tapered edges thereon, comprising:

- continuously preparing expandable, flexible, lightweight spacers or packing pieces between 1 and 2 mm thick and 5 to 20 mm wide,
- cutting said packing pieces to a length equal to a width of the plasterboard being produced less a value comprised between 0 and 10 cm,
- applying adhesive to an upper face of said packing pieces,
- continuously bonding said packing pieces on-the-fly to the bottom of one of said cardboard-type paper sheets transversely thereto, centered, and perpendicular to a direction of advancement of said paper sheet at accurate regular intervals,
- bonding said packing pieces to said paper sheet in a region ahead of said shaping means,
- allowing said packing pieces to be carried along by said paper sheet,
- adjusting a tension in said paper sheet so as to regulate a width of an imprint created therein to between 10 and 18 cm,
- leaving said packing pieces fastened to said paper sheet for the time needed to pass through said shaping means and the time needed for the composite strip composed of said paper sheets and the hydraulic binder to harden, and

- cutting the composite strip with knife means in the middle of the imprints left by said packing pieces.

14. (New) The method according to claim 13, wherein said packing pieces are stripped off on-the-fly after said composite strip has hardened in a region extending from an end of a hardening belt and said knife means, and preferably in a region located between hardening belts immediately following one hardening belt, or in a region located close to and ahead of said knife means.

15. (New) The method according to claim 13, wherein said packing pieces are cut from a roll of flexible strip which is of paper, plastic material, organic material, metal or composite material.

16. (New) The method according to claim 15, wherein a pricked packing piece taken from a roll of flexible strip is pricked over its length along at least one line of pins of variable length allowing control of the overall thickness of a pricked packing piece and consequently of the depth of the transverse tapering being sought, the ends of a pricked packing piece being themselves pricked to a depth different to said height of said pins at a mid-point of said pricked packing piece.

17. (New) The method according to claim 13, wherein said packing piece is reduced to a wire packing piece or a double wire packing piece, said wire originating from a roll of flexible wire either of paper, plastic material, synthetic material, organic material, composite material, or metal.

18. (New) The method according to Claim 13, wherein a surface of said paper sheet on the same side as said packing piece and at both sides of said packing piece and in

coincidence with a future transverse tapering created by said packing piece is roughened either by stamping, pricking, knurling, brushing, said surface being additionally pre-marked along two notch lines parallel to said packing piece in a region corresponding to at future beginning of a said transverse taper created by said packing piece.

19. (New) Apparatus for carrying out a method in which two sheets of cardboard-type paper are unwound and come to enclose a plaster-based hydraulic binder in shaping means to constitute a composite strip which hardens on two hardening belts fitted with tapered strips for creating horizontal tapers in a plasterboard production line in which the apparatus further comprises the following means:

- a bonder follower device located in a region ahead of said shaping means provided for preparing said packing pieces from a roll of flexible strip, for coming into contact at high frequency with one of said paper sheets for accurately bonding on-the-fly said packing pieces to the bottom of said paper sheet for roughening and pre-marking said paper sheet at both sides of a packing piece bonded to the bottom of the one said paper sheet ,
- a guide sheet located between said binder follower device and said shaping means provided to protect said packing pieces against being torn off, and for facilitating the passage and sliding of said packing pieces between said bonder follower device and said shaping means,
- packing piece removing means located after a hardening belt and ahead of cutting means provided for removing on-the-fly packing pieces bonded to the bottom of said composite strip, and
- cutting means located after a said hardening belt and after said packing piece removing means provided for cutting said composite strip in alignment with each of a number of imprints created by said packing pieces.

20. (New) The apparatus according to claim 19, wherein the bonding follower device is a linearly moving bonding follower device constituted by a lower table located underneath one of said paper sheets and another counter-table situated above the said one of said paper sheets, said lower table receiving packing pieces originating from a roll of flexible strip and carrying adhesive applied by adhesive-applying means and cut to length by a knife and being provided with a stamper and jacking means and guides, said upper counter-table being fitted with a compressible abutment plate, a counter-stamper and a pulse sensor, the two said tables being carried by a carriage moved by motor and transmission means.

21. (New) The apparatus according to claim 19, wherein said bonding follower device is a rotary bonding follower device constituted by a lower roller located below said one paper sheet and an upper roller located above said one paper sheet, said lower roller receiving packing pieces originating from a roll of flexible strip and carrying adhesive applied by adhesive applying means and cut to length by a knife and being equipped at its periphery by a stamper, said upper roller located above said one paper sheet in parallel with said first lower roller being equipped at its periphery with a compressible abutment plate and a counter-stamper and being connected to jacking means and guides, the two said rollers being provided with motor and transmission means and with a pulse sensor.

22. (New) The apparatus according to claim 19, wherein a guide sheet thereof is constituted by a flexible, slippery and wear-resistant film, secured upstream of said table by fixing means, said flexible film, of greater width than a length of said packing pieces simultaneously embracing said table, beaters, projecting points, guides for said one of said paper sheets in the region between a mixer and shaping means, said flexible film presenting to said packing pieces within said region a surface that is smooth, slippery and devoid of points where catching or snagging can occur.

23. (New) The apparatus according to claim 19, wherein said means for removing packing pieces consists of jacking means controlled by an imprint detector and associated electronics, said jacking means being connected to a brush itself fitted with a motor, said brush being located below said composite strip and positioned so as to be inclined with respect thereto.

24. (New) The apparatus according to claim 19, wherein said cutting means consist of a shear, an imprint detector at a known distance from said shear and shear stroke calculating means.